Applied Physics B

Photophysics and Laser Chemistry

Volume B 45
1988

Board of Editors

V. P. Chebotayev, Novosibirsk
T. W. Hänsch, München
W. Kaiser, München
K. L. Kompa, Garching
V. S. Letokhov, Moscow
H. K. V. Lotsch, Heidelberg
F. P. Schäfer, Göttingen
W. Schmidt, Aalen
Y. R. Shen, Berkeley, CA
H. Walther, Garching
J. Wolfrum, Heidelberg
T. Yajima, Tokyo

Copyright

Submission of a manuscript implies: that the work described has not been published before (except in the form of an abstract or as part of a published lecture, review, or thesis); that it is not under consideration for publication elsewhere; that its publication has been approved by all coauthors, if any, as well as by the responsible authorities at the institute where the work has been carried out; that, if and when the manuscript is accepted for publication, the authors agree to automatic transfer of the copyright to the publisher; and that the manuscript will not be published elsewhere in any language without the consent of the copyright holders.

All articles published in this journal are protected by copyright, which covers the exclusive rights to reproduce and distribute the article (e.g., as offprints), as well as all translation rights. No material published in this journal may be reproduced photographically or stored on microfilm, in electronic data bases, video disks, etc., without first obtaining written permission from the publisher.

The use of general descriptive names, trade names, trademarks, etc., in this publication, even if not specifically identified, does not imply that these names are not protected by the relevant laws and regulations.

While the advice and information in this journal is believed to be true and accurate at the date of its going to press, neither the authors, the editors, nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Special regulations for photocopies in the USA: Photocopies may be made for personal or in-house use beyond the limitations stipulated under Section 107 or 108 of U.S. Copyright Law, provided a fee is paid. This fee is US $ 0.20 per page, or a minimum of US $ 1.00 if an article contains fewer than five pages. All fees should be paid to the Copyright Clearance Center, Inc., 21 Congress Street, Salem. MA 01970, USA, stating the ISSN 0721-7269, the volume, and the first and last page numbers of each article copied. The copyright owner's consent does not include copying for general distribution, promotion, new works, or resale. In these cases, specific written permission must first be obtained from the publisher.

Printers: Brühlsche Universitätsdruckerei, Giessen
Printed in Germany © by Springer-Verlag Berlin, Heidelberg 1988

Springer International

PHYSICS AND ASTRONOMY CLASSIFICATION SCHEME (PACS)

Shortened version for use in classifying papers for Applied Physics

GENERAL

- **02 Mathematical methods in physics**
- **06 Measurement science and metrology**
- **07 Specific instrumentation**
  - 07.60 Optical instruments and techniques, detection of radiation
  - 07.65 Optical spectroscopy and spectrometers
  - 07.75 Mass spectrometers and mass-spectroscopy techniques
  - 07.80 Electron and ion microscopes and spectrometers; techniques
  - 07.85 X- and gamma-ray instruments and techniques

ATOMIC AND MOLECULAR PHYSICS

- **32 Atomic spectra and interactions with photons**
- **33 Molecular spectra and interactions of molecules with photons**
- **34 Atomic and molecular collision processes and interactions**
- **35 Experimentally derived information on atoms and molecules**
- **36 Studies of special atoms and molecules (macro- and polymer molecules, clusters)**

FUNDAMENTAL AREAS OF PHENOMENOLOGY (INCLUDING APPLICATIONS)

- **41 Electric and magnetism**
- **42 Optics** *(see also 78)*
  - 42.10 Propagation and transmission in homogenous media
  - 42.20 Propagation and transmission in homogeneous media
  - 42.30 Optical information, image formation and analysis
  - 42.40 Holography
  - 42.50 Quantum optics
  - 42.55 Laser processes
    - C *Pumping mechanisms*
    - E *Molecular gas lasers* (CO_2, CO, N_2O, *formaldehyde*)
    - G *Excimer lasers*
    - H *Atomic, ionic, and other gas lasers*
    - M *Laser action in liquids and organic dyes*
    - P *Lasing action in semiconductors*
    - R *Laser action in solid-state lasers*
    - T *Free-electron lasers*
  - 42.60 Laser systems and laser-beam applications
    - B *Design of specific lasers systems*
    - D *Laser resonators, cavities, and amplifiers*
    - E *Laser beam deflection and focusing*
    - F *Laser beam modulation, mode locking, and tuning*
  - 42.65 Nonlinear optics
  - 42.68 Atmospheric optics
  - 42.70 Optical materials
  - 42.80 Optical devices, techniques, and applications (including fiber and integrated optics)
- **43 Acoustics** *(see also 62)*

FLUIDS, PLASMAS, AND ELECTRIC DISCHARGES

- **52 Physics of plasmas and electric discharges**

CONDENSED MATTER: STRUCTURE, MECHANICAL AND THERMAL PROPERTIES

- **61 Structure of liquids and solid; crystallography** *(for surface structure, see 68.35; for thin-film structure, see 68.55))*
  - 61.10 Determination of structures
  - 61.12 Neutron determination of structures
  - 61.14 Electron determination of structures
  - 61.16 Other determination of structures
  - 61.20 Liquid structures and crystals
  - 61.40 Amorphous and polymer materials, glasses
  - 61.70 Defects in crystals
  - 61.80 Radiation damage and other irradiation effects
- **62 Mechanical and acoustical properties of condensed matter**
- **63 Lattice dynamics and crystal statistics**
- **64 Phase equilibria, and phase transitions**
- **65 Thermal properties of condensed matter**
- **66 Transport properties of condensed matter (nonelectronic)**
  - 66.30 Diffusion and ionic conduction in solids
- **68 Surfaces and interfaces; thin films and whiskers**
  - 68.10 Fluid surfaces and fluid-fluid interfaces
  - 68.15 Liquid thin films
  - 68.35 Solid surfaces and solid-solid interfaces (including bicrystals)
  - 68.45 Solid-fluid interfaces
  - 68.55 Thin films: growth, structure, epitaxy and nonelectronic properties
  - 68.65 Layer structures, intercalation compounds, and superlattices: growth, structure, and nonelectronic properties
  - 68.70 Whiskers and dendrites: growth, structure, and nonelectronic properties

CONDENSED MATTER: ELECTRONIC STRUCTURE, ELECTRICAL, MAGNETIC, AND OPTICAL PROPERTIES

- **71 Electron states**
- **72 Electronic transport**
  - 72.15 Electronic phenomena in metals and alloys
  - 72.20 Conductivity phenomena in semiconductors and insulators
  - 72.40 Photoconduction and photovoltaic effects
  - 72.50 Acoustoelectric effects
  - 72.60 Mixed conductivity and conductivity transitions
  - 72.70 Noise processes and phenoma
- **73 Electronic structure and electrical properties of surfaces, interfaces, and thin films**
  - 73.20 Electronic surface states
  - 73.25 Surface conductivity
  - 73.30 Surface double layers, Schottky barriers, and work functions
  - 73.40 Interfaces
  - 73.60 Electronic properties of thin films
- **74 Superconductivity**
- **75 Magnetic properties and materials**
  - 75.70 Magnetic films and plates
- **76 Magnetic resonances and relaxation; Mössbauer effect**
- **77 Dielectric properties and materials**
  - 77.55 Dielectric thin films
- **78 Optical properties**
  - 78.30 Infrared and Raman spectra
  - 78.65 Optical properties of thin films
  - 78.70 X-ray spectra and positron annihilation
- **79 Electron and ion emission by liquids and solids; impact phenomena**
  - 79.20 Impact phenomena (including electron spectra and sputtering)
  - 79.40 Thermionic, field- and photoemission
  - 79.60 Photoemission and photoelectron spectra
  - 79.70 Field emission and field ionization

CROSS-DISCIPLINARY PHYSICS

- **81 Materials science**
  - 81.10 Methods of crystal growth and thin-film deposition
  - 81.15 Methods of thin-film deposition
  - 81.40 Treatment of materials and its effect on microstructure and properties
  - 81.60 Corrision, oxidation, and surface treatments
- **82 Physical chemistry**
  - 82.20 Chemical kinetics and chemical reactions
  - 82.30 Specific chemical reactions; reaction mechanisms
  - 82.45 Electrochemistry and electrophoresis
  - 82.50 Photochemistry and radiation chemistry
  - 82.65 Surface processes
  - 82.70 Dispersive systems
  - 82.80 Chemical analysis and related physical methods of analysis
- **84 Electromagnetic technology**
  - 84.60 Direct energy conversion and energy storage
- **85 Electrical and magnetic devices**
  - 85.30 Semiconductor devices
  - 85.40 Integrated electronics
  - 85.60 Photoelectric and optoelectronic devices and systems
  - 85.80 Electrochemical, thermo-EM, and other devices
- **87 Biophysics (biological effects of radiation)**

A classified index for Volumes 1–25 can be found in Appl. Phys. **25**, 367–453 (1981), one for Volume 26–40 in Appl. Phys. B 40/4 (August 1986),and an earlier index for Volumes 1–15 at the end of Appl. Phys. **15**, (May 1978)

Contents

This listing presents the papers in alphabetical order of the first author, subdivided according to the groupings "Solids and Materials" and "Surfaces, Interfaces, and Layer Structures". The author index that follows covers APPLIED PHYSICS A and B, and is presented in tabular form. The names are listed in alphabetical order in the first column. The second column the bibliographic data necessary to locate the paper. The issue is specified by the number separated from the volume number by a slash. The fourth column states the major PACS number so that the topic of the paper can be inferred by consulting the PACS listing on the left page.

PHOTOPHYSICS and LASER CHEMISTRY

Au L.B., Solymar L.:
Amplification in photorefractive materials via a higher order wave.
Appl. Phys. B 45/3, 125-128 (1988) PACS:42.65 42.40 42.80

Barth H.D., Jackschath C., Pertsch T., Huisken F.:
CARS spectroscopy of molecules and clusters in supersonic jets
Appl. Phys. B 45/4, 205-214 (1988) PACS:42.65 33.20 36.40 34.50

Carelli G., Ioli N., Moretti A., Pereira D., Strumia F., Densing R.:
Frequency and efficiency measurements on FIR laser lines close to the N+ 3P2-3P1 transition.
Appl. Phys. B 45/2, 97-100 (1988) PACS:42.55H 42.60 35.00

Casdorff R., Blatt R.:
Ordered structures and statistical properties of ion clouds stored in a Paul trap.
Appl. Phys. B 45/3, 175-182 (1988) PACS:32.80 35.80 05.40

Castillejo M., Zhou J.Y., Hutchinson M.H.R.:
Coherent VUV generation by frequency mixing in glass hollow waveguides.
Appl. Phys. B 45/4, 293-299 (1988) PACS:42.65

Chen Y.:
Behaviour of polarization beam splitters made from different types of fiber.
Appl. Phys. B 45/1, 17-20 (1988) PACS:42.20 85.60

Couture M., Piché M.:
On longitudinal mode spacing of laser cavities with pairs of gratings.
Appl. Phys. B 45/2, 93-95 (1988) PACS:42.60D

Daunois A., Bigot J.Y.:
Switching dynamics of optical bistable devices.
Appl. Phys. B 45/3, 157-162 (1988) PACS:42.65

Dreier T., Lange B., Wolfrum J., Zahn M.:
Determination of temperature and concentration of molecular nitrogen, oxygen and methane with coherent anti-Stokes Raman scattering.
Appl. Phys. B 45/3, 183-190 (1988) PACS:33.20 37.70 42.65

Eckbreth A.C., Anderson T.J., Dobbs G.M.:
Multi-color CARS for hydrogen-fueled scramjet applications.
Appl. Phys. B 45/4, 215-223 (1988) PACS:07.60 33.00 42.80

Egorov S.E., Letokhov V.S., Moskovets E.V.:
Laser-stimulated field desorption of molecular ions from a tungsten emitter.
Appl. Phys. B 45/1, 53-57 (1988) PACS:33.00 79.20 79.70

Eichler H.-J.:
Editorial: Photonic switches for lasers and optical processors
Appl. Phys. B 45/3, 109-112 (1988) PACS:42.65

Forsmann F., Jäger D.:
Thermooptical SEED devices: External control of nonlinearity, bistability and switching behaviour.
Appl. Phys. B 45/3, 151-155 (1988) PACS:42.65 42.80

Fouckhardt H., Ebeling K.J.:
Photonic switching in GaAlAs optical strip waveguides by photo-induced electroabsorption.
Appl. Phys. B 45/3, 163-169 (1988) PACS:42.82 42.65 42.10

Großkopf G., Ludwig R., Molt R., Weber H.G., Zhang S.B.:
Semiconductor-laser amplifier as an optically controlled switch.
Appl. Phys. B 45/3, 171-174 (1988) PACS:42.65 42.80

Güsten H., Rinke M., Wirth H.O.:
Photophysical properties and laser performance of photostable UV laser dyes.
Appl. Phys. B 45/4, 279-284 (1988) PACS:07.65 33.00 42.55 82.50

Hertz H.M., Aldén M., Svanberg S.:
Correction of imaging errors in spatially resolved laser scattering experiments in flames.
Appl. Phys. B 45/1, 33-36 (1988) PACS:82.40 42.30 42.60

Hube M., Brinkmann R., Welling H., Beigang R., Wellegehausen B.:
A cadmium photoionization laser pumped by laser induced plasma radiation from a multi foci device.
Appl. Phys. B 45/3, 197-201 (1988) PACS:32.80H 42.55

Ibison M.C., Hanna D.C.:
Analysis of Raman gain for focussed Gaussian pump beams.
Appl. Phys. B 45/1, 37-44 (1988) PACS:42.65 78.30

Jun C., Eichler H.-J.:
Laser beam defocusing at 1.06um by carrier excitation in silicon.
Appl. Phys. B 45/3, 121-124 (1988) PACS:42.65K 72.20 78.20

Kaiser J.H.:
Regularization in ellipsometry: Near surface depth profiles of the refractive index.
Appl. Phys. B 45/1, 1-5 (1988) PACS:02.60N 07.60 78.20

Kalinin V., Solymar L.:
Transient effects in four-wave mixing in photorefractive passive phase conjugate mirrors.
Appl. Phys. B 45/3, 129-135 (1988) PACS:42.65 42.80

Kaschke M., Wilhelmi B., Egorov V.D., Nguyen H.X., Zimmermann R.:
Pump-pulse induced chirp production in semiconductors.
Appl. Phys. B 45/2, 71-75 (1988) PACS:42.10 42.65

Kielich S., Tanas R., Zawodny R.:
Second-harmonic generated by self-squeezed light in isotropic medium. The role of light intensity-dependent effects in molecular-statistical structure.
Appl. Phys. B 45/4, 249-258 (1988) PACS:42.50D 42.65

Kodirov M.K., Popov A.K., Slabko V.V., Yakhnin V.Z.:
Atomic-density distribution in a metal vapor cell studied by third-harmonic generation.
Appl. Phys. B 45/1, 47-52 (1988) PACS:42.65 42.80

Koren G., Donelon J.J.:
CO2 laser cleaning of black deposits formed during the excimer laser etching of polyimide in air.
Appl. Phys. B 45/1, 45-46 (1988) PACS:81.40T 42.80 82.50

Krausz F., Lasztity P., Bakos J.S Wintner E., Leising G.:
The influence of photoinduced structural distortions on interband absorption in polyacetylene.
Appl. Phys. B 45/1, 21-25 (1988) PACS:42.65 63.20

Lokai P., Burghardt B., Mückenheim W.:
Sum-frequency generation in a cooled beta-BaB2O4 crystal.
Appl. Phys. B 45/4, 245-247 (1988) PACS:42.65C

Luo X., Koch M., Urban W., Sung C.L., Yü Q.X., Lin J.X.:
Simultaneous two line operation of a cw-CO laser with arbitrary choice of laser transitions.
Appl. Phys. B 45/1, 13-16 (1988) PACS:42.60D 33.80

Meis C., Desaintfuscien M., Jardino M:
Analytical calculation of the space charge potential and the temperature of stored ions in an rf quadrupole trap.
Appl. Phys. B 45/2, 59-64 (1988) PACS:06.00 07.65

Meyer J., Kutzner J., Feldmann D., Welge K.H.:
Time-resolved experiments on the photoablation of polystyrene and PMMA by ArF-laser radiation.
Appl. Phys. B 45/1, 7-12 (1988) PACS:42.60K 79.20 81.60 82.50

Mlynek J., Grimm R., Buhr E., Jordan V.:
Raman heterodyne Ramsey spectroscopy in a samarium atomic beam.
Appl. Phys. B 45/2, 77-82 (1988) PACS:42.65F 32.80 32.30

Morinaga A., Helmcke J.:
High-resolution velocity selecting separated-field excitation of a calcium atomic beam.
Appl. Phys. B 45/4, 273-277 (1988) PACS:42.65G 32.80 06.30

Mückenheim W., Lokai P., Burghardt B., Basting D.:
Attaining the wavelength range 189-197 nm by frequency mixing in beta-BaB2O4.
Appl. Phys. B 45/4, 259-261 (1988) PACS:42.65C

Osborne M.R.:
Rare-gas-halide discharge stability.
Appl. Phys. B 45/4, 285-291 (1988) PACS:42.55H 52.35

Qiu P., Penzkofer A.:
Picosecond third-harmonic light generation in beta-BaB2O4.
Appl. Phys. B 45/4, 225-236 (1988) PACS:42.65C

Rettig W.:
Photophysical and photochemical switches based on twisted intramolecular charge transfer (TICT) states.
Appl. Phys. B **45**/3, 145–149 (1988) PACS:82.50 85.60 42.55

Snels M., Meerts W.L.:
High-resolution spectroscopy of CF2Cl2 in a molecular jet.
Appl. Phys. B **45**/1, 27–31 (1988) PACS:33.00 34.00 35.00

Speiser S., Chisena F.L.:
Optical bistability in flourescein dyes.
Appl. Phys. B **45**/3, 137–144 (1988) PACS:33.00 42.65 42.70

Speiser S., Houlding V.H., Yardley J.T.:
Nonlinear optical properties of organic dye dimer-monomer systems.
Appl. Phys. B **45**/4, 237–243 (1988) PACS:33.00 42.65 42.70

Stamm U.:
Numerical analysis of pulse generation in synchronously modelocked cw dye lasers.
Appl. Phys. B **45**/2, 101–108 (1988) PACS:42.55M 42.60 42.65

Stankov K.A.:
A mirror with intensity-dependent reflection coefficient.
Appl. Phys. B **45**/3, 191–195 (1988) PACS:42.65 42.55

Sun M., Yu W., Li M., Feng X.:
Synthesis of ethylamine with a cw tunable CO2 laser.
Appl. Phys. B **45**/2, 83–86 (1988) PACS:82.50

Suzuki T., Tanaka Y., Onae A., Tachikawa M., Shimizu T.:
Measurement of rotational temperature in CO2 waveguide laser medium.
Appl. Phys. B **45**/2, 87–91 (1988) PACS:42.55D 44.10

Toda K., Yoshida S.:
Pb2CrO5 photovoltaic device for detecting light-beam position.
Appl. Phys. B **45**/2, 65–69 (1988) PACS:07.60 85.60 72.40

Wallmeier H., Zacharias H.:
Continuously tunable VUV radiation (129–210 nm) by anti-Stokes Raman scattering in cooled H2.
Appl. Phys. B **45**/4, 263–272 (1988) PACS:33.20N 42.65

Weber C., Becker U., Renner R., Klingshirn C.:
Laser-induced grating self-diffraction from a medium with induced absorption.
Appl. Phys. B **45**/3, 113–120 (1988) PACS:78.65 72.20 72.40

Indexed in *Current Contents*

Name	First Name	Applied Physics	PACS
Ahmad M.	Ahmad M.	A 45/3, 203-205 (1988)	72.15
Aktas G.	Aktulga E.	A 45/3, 221-224 (1988)	72.40
Aktulga E.	Aktulga E.	A 45/3, 221-224 (1988)	72.40
Aldén M.	Hertz H.M.	B 45/1, 33-36 (1988)	82.40
Anderson T.J.	Eckbreth A.C.	B 45/4, 215-223 (1988)	07.60
Atrens A.	Jin S.	A 45/1, 83-91 (1988)	68.45
Attia V.A.	El-Dessouki M.S.	A 45/2, 175-178 (1988)	73.20
Au L.B.	Au L.B.	B 45/3, 125-128 (1988)	42.65
Bachem K.H.	Jantz W.	A 45/3, 225-232 (1988)	07.50
Bakos J.S.	Krausz F.	B 45/1, 21-25 (1988)	42.65
Banerjee S.	Sharma S.K.	A 45/3, 217-220 (1988)	66.30
Bao Q.	Liu Z.X.	A 45/2, 159-164 (1988)	82.65J
Barringer E.A.	Barringer E.A.	A 45/4, 271-275 (1988)	81.20E
Barth H.D.	Barth H.D.	B 45/4, 205-214 (1988)	42.65
Bartsch H.	Vitali G.	A 45/2, 133-135 (1988)	61.16D
Basting D.	Mückenheim W.	B 45/4, 259-261 (1988)	42.65C
Bäuerle D.	Liberts G.	A 45/4, 313-316 (1988)	74.00
Bäuerle D.	Mogyorosi P.	A 45/4, 293-299 (1988)	81.60
Becker U.	Weber C.	B 45/3, 113-120 (1988)	78.65
Beigang R.	Hube M.	B 45/3, 197-201 (1988)	32.80H
Bentini G.G.	Bentini G.G.	A 45/4, 317-324 (1988)	79.20D
Bergh H.van den	Braichotte D.	A 45/4, 337-343 (1988)	42.60
Bhatia K.L.	Bhatia K.L.	A 45/1, 69-72 (1988)	78.65
Bianconi M.	Bentini G.G.	A 45/4, 317-324 (1988)	79.20D
Bigot J.Y.	Daunois A.	B 45/3, 157-162 (1988)	42.65
Blatt R.	Casdorff R.	B 45/3, 175-182 (1988)	32.80
Böhm M.	Böhm M.	A 45/1, 53-61 (1988)	61.40
Bowen H.K.	Barringer E.A.	A 45/4, 271-275 (1988)	81.20E
Braichotte D.	Braichotte D.	A 45/4, 337-343 (1988)	42.60
Braren B.	Srinivasan R.	A 45/4, 289-292 (1988)	42.60
Brinkmann R.	Hube M.	B 45/3, 197-201 (1988)	32.80H
Brylowska I.	Paprocki K.	A 45/2, 109-112 (1988)	61.10T
Buhr E.	Mlynek J.	B 45/2, 77-82 (1988)	42.65F
Burghardt B.	Lokai P.	B 45/4, 245-247 (1988)	42.65C
Burghardt B.	Mückenheim W.	B 45/4, 259-261 (1988)	42.65C
Cantarero A.	Cantarero A.	A 45/2, 125-132 (1988)	78.20D
Carelli G.	Carelli G.	B 45/2, 97-100 (1988)	42.55H
Casdorff R.	Casdorff R.	B 45/3, 175-182 (1988)	32.80
Castillejo M.	Castillejo M.	B 45/4, 293-299 (1988)	42.65
Chen L.-W.	Jiang J.-S.	A 45/3, 245-247 (1988)	68.35
Chen Y.	Chen Y.	B 45/1, 17-20 (1988)	42.20
Chevy A.	Cantarero A.	A 45/2, 125-132 (1988)	78.20D
Chisena F.L.	Speiser S.	B 45/3, 137-144 (1988)	33.00
Chuang T.J.	Chuang T.J.	A 45/4, 277-288 (1988)	82.50E
Couture M.	Couture M.	B 45/2, 93-95 (1988)	42.60D
D'Anna E.	D'Anna E.	A 45/4, 325-335 (1988)	68.55
Das P.	Tabib-Azar M.	A 45/2, 119-124 (1988)	72.50
Daunois A.	Daunois A.	B 45/3, 157-162 (1988)	42.65
Desaintfuscien M.	Meis C.	B 45/2, 59-64 (1988)	06.00
Dobbs G.M.	Eckbreth A.C.	B 45/4, 215-223 (1988)	07.60
Dobson P.J.	Joyce B.A.	A 45/3, 255-260 (1988)	61.14H
Donelon J.J.	Koren G.	B 45/1, 45-46 (1988)	81.40T
Dreier T.	Dreier T.	B 45/3, 183-190 (1988)	33.20
Drwiega M.	Poradzisz A.	A 45/2, 155-158 (1988)	61.80
Dürr H.	Fauster Th.	A 45/1, 63-67 (1988)	79.20N
Du Y.C.	Du Y.C.	A 45/2, 165-168 (1988)	52.80S
Ebeling K.J.	Fouckhardt H.	B 45/3, 163-169 (1988)	42.82
Eckbreth A.C.	Eckbreth A.C.	B 45/4, 215-223 (1988)	07.60
Egorov S.E.	Egorov S.E.	B 45/1, 53-57 (1988)	33.00
Egorov V.D.	Kaschke M.	B 45/2, 71-75 (1988)	42.10
Eichler H.-J.	Eichler H.-J.	B 45/3, 109-112 (1988)	42.65
Eichler H.-J.	Jun C.	B 45/3, 121-124 (1988)	42.65K
El-Dessouki M.S.	El-Dessouki M.S.	A 45/2, 175-178 (1988)	73.20
Eyett M.	Liberts G.	A 45/4, 313-316 (1988)	74.00
Fan H.J.	Liu Z.X.	A 45/2, 159-164 (1988)	82.65J
Fauster Th.	Fauster Th.	A 45/1, 63-67 (1988)	79.20N
Feile R.	Feile R.	A 45/3, 185-187 (1988)	61.40
Feldmann D.	Meyer J.	B 45/1, 7-12 (1988)	42.60K
Felici R.	Felici R.	A 45/2, 169-174 (1988)	61.10F
Feng X.	Sun M.	B 45/2, 83-86 (1988)	82.50
Fischer A.	Ploog K.	A 45/3, 233-244 (1988)	68.55
Fisk Z.	McElfresh M.W.	A 45/4, 365-368 (1988)	74.70V
Fogarassy E.	Foulon F.	A 45/4, 361-364 (1988)	68.15
Forsmann F.	Forsmann F.	B 45/3, 151-155 (1988)	42.65
Fouckhardt H.	Fouckhardt H.	B 45/3, 163-169 (1988)	42.82
Foulon F.	Foulon F.	A 45/4, 361-364 (1988)	68.15
Frey Th.	Jantz W.	A 45/3, 225-232 (1988)	07.50
Fuchs C.	Foulon F.	A 45/4, 361-364 (1988)	68.15
Furuno S.	Sato T.	A 45/4, 355-360 (1988)	81.10
Gallagher P.K.	Grader G.S.	A 45/3, 179-183 (1988)	74.00
Gamo K.	Takai M.	A 45/4, 305-312 (1988)	81.40
Grader G.S.	Grader G.S.	A 45/3, 179-183 (1988)	74.00
Grimm R.	Mlynek J.	B 45/2, 77-82 (1988)	42.65F
Großkopf G.	Großkopf G.	B 45/3, 171-174 (1988)	42.65
Gurvitch M.	Grader G.S.	A 45/3, 179-183 (1988)	74.00
Güsten H.	Güsten H.	B 45/4, 279-284 (1988)	07.65
Hanabusa M.	Sato T.	A 45/4, 355-360 (1988)	81.10
Hanna D.C.	Ibison M.C.	B 45/1, 37-44 (1988)	42.65
Hartwig D.	Fauster Th.	A 45/1, 63-67 (1988)	79.20N
Hasegawa M.	Ito Y.	A 45/3, 193-201 (1988)	78.70D
Hauser M.	Ploog K.	A 45/3, 233-244 (1988)	68.55
Hautala M.	Likonen J.	A 45/2, 137-150 (1988)	79.20
Helmcke J.	Morinaga A.	B 45/4, 273-277 (1988)	42.65G
Hertz H.M.	Hertz H.M.	B 45/1, 33-36 (1988)	82.40
Hesch K.	Metzger D.	A 45/4, 345-353 (1988)	81.15
Hess P.	Metzger D.	A 45/4, 345-353 (1988)	81.15
Hiraoka H.	Chuang T.J.	A 45/4, 277-288 (1988)	82.50E
Hofmann K.C.	Schott K.	A 45/1, 73-76 (1988)	68.55
Houlding V.H.	Speiser S.	B 45/4, 237-243 (1988)	33.00
Hube M.	Hube M.	B 45/3, 197-201 (1988)	32.80H
Huisken F.	Barth H.D.	B 45/4, 205-214 (1988)	42.65
Hurst J.E.	Koren G.	A 45/4, 301-304 (1988)	42.60
Hutchinson M.H.R.	Castillejo M.	B 45/4, 293-299 (1988)	42.65
Ibison M.C.	Ibison M.C.	B 45/1, 37-44 (1988)	42.65
Iguchi S.	Sato T.	A 45/4, 355-360 (1988)	81.10
Ioli N.	Carelli G.	B 45/2, 97-100 (1988)	42.55H
Ito Y.	Ito Y.	A 45/3, 193-201 (1988)	78.70D
Jackschath C.	Barth H.D.	B 45/4, 205-214 (1988)	42.65
Jäger D.	Forsmann F.	B 45/3, 151-155 (1988)	42.65
Jain A.K.	Sharma S.K.	A 45/3, 217-220 (1988)	66.30
Jantz W.	Jantz W.	A 45/3, 225-232 (1988)	07.50
Jardino M.	Meis C.	B 45/2, 59-64 (1988)	06.00
Jiang J.-S.	Jiang J.-S.	A 45/3, 245-247 (1988)	68.35
Jin S.	Jin S.	A 45/1, 83-91 (1988)	68.45
Jones K.S.	Jones K.S.	A 45/1, 1-34 (1988)	61.80
Jordan V.	Mlynek J.	B 45/2, 77-82 (1988)	42.65F
Joyce B.A.	Joyce B.A.	A 45/3, 255-260 (1988)	61.14H
Jun C.	Jun C.	B 45/3, 121-124 (1988)	42.65K
Kaiser J.H.	Kaiser J.H.	B 45/1, 1-5 (1988)	02.60N
Kalbitzer S.	Bhatia K.L.	A 45/1, 69-72 (1988)	78.65
Kalinin V.	Kalinin V.	B 45/3, 129-135 (1988)	42.65
Kalitzova M.	Vitali G.	A 45/2, 133-135 (1988)	61.16D
Kaschke M.	Kaschke M.	B 45/2, 71-75 (1988)	42.10
Kempf J.	Kempf J.	A 45/1, 77-81 (1988)	73.60
Kielich S.	Kielich S.	B 45/4, 249-258 (1988)	42.50D
Kiss Z.	Böhm M.	A 45/1, 53-61 (1988)	61.40
Klingshirn C.	Weber C.	B 45/3, 113-120 (1988)	78.65
Koch M.	Luo X.	B 45/1, 13-16 (1988)	42.60D
Kodirov M.K.	Kodirov M.K.	B 45/1, 47-52 (1988)	42.65
Kolawa E.	So F.C.T.	A 45/4, 265-270 (1988)	81.15
Koren G.	Koren G.	B 45/1, 45-46 (1988)	81.40T
Koren G.	Koren G.	A 45/4, 301-304 (1988)	42.60
Krätschmer W.	Bhatia K.L.	A 45/1, 69-72 (1988)	78.65
Krausz F.	Krausz F.	B 45/1, 21-25 (1988)	42.65

Name	First Name	Applied Physics	PACS
Kuldeep	Sharma S.K.	A 45/3, 217-220 (1988)	66.30
Kullmer R.	Mogyorosi P.	A 45/4, 293-299 (1988)	81.60
Kutzner J.	Meyer J.	B 45/1, 7-12 (1988)	42.60K
Lange B.	Dreier T.	B 45/3, 183-190 (1988)	33.20
Lasztity P.	Krausz F.	B 45/1, 21-25 (1988)	42.65
Lazarski S.	Poradzisz A.	A 45/2, 155-158 (1988)	61.80
Leggieri G.	D'Anna E.	A 45/4, 325-335 (1988)	68.55
Leising G.	Krausz F.	B 45/1, 21-25 (1988)	42.65
Leo K.	Leo K.	A 45/1, 35-39 (1988)	72.10D
Letokhov V.S.	Egorov S.E.	B 45/1, 53-57 (1988)	33.00
Liberts G.	Liberts G.	A 45/4, 313-316 (1988)	74.00
Li F.H.	Liu Z.X.	A 45/2, 159-164 (1988)	82.65J
Li F.M.	Du Y.C.	A 45/2, 165-168 (1988)	52.80S
Likonen J.	Likonen J.	A 45/2, 137-150 (1988)	79.20
Li M.	Sun M.	B 45/2, 83-86 (1988)	82.50
Lin J.X.	Luo X.	B 45/1, 13-16 (1988)	42.60D
Lin Z.D.	Liu Z.X.	A 45/2, 159-164 (1988)	82.65J
Lipinska E.	Poradzisz A.	A 45/2, 155-158 (1988)	61.80
Liu Z.X.	Liu Z.X.	A 45/2, 159-164 (1988)	82.65J
Lokai P.	Lokai P.	B 45/4, 245-247 (1988)	42.65C
Lokai P.	Mückenheim W.	B 45/4, 259-261 (1988)	42.65C
Luches A.	D'Anna E.	A 45/4, 325-335 (1988)	68.55
Ludwig R.	Großkopf G.	B 45/3, 171-174 (1988)	42.65
Luo X.	Luo X.	B 45/1, 13-16 (1988)	42.60D
Maple M.B.	McElfresh M.W.	A 45/4, 365-368 (1988)	74.70V
Martinez-Pastor J.	Cantarero A.	A 45/2, 125-132 (1988)	78.20D
Mazzone A.M.	Mazzone A.M.	A 45/2, 113-118 (1988)	61.80
McElfresh M.W.	McElfresh M.W.	A 45/4, 365-368 (1988)	74.70V
Meerts W.L.	Snels M.	B 45/1, 27-31 (1988)	33.00
Meis C.	Meis C.	B 45/2, 59-64 (1988)	06.00
Metzger D.	Metzger D.	A 45/4, 345-353 (1988)	81.15
Meyer J.	Meyer J.	B 45/1, 7-12 (1988)	42.60K
Mlynek J.	Mlynek J.	B 45/2, 77-82 (1988)	42.65F
Mödl A.	Chuang T.J.	A 45/4, 277-288 (1988)	82.50E
Mogyorosi P.	Mogyorosi P.	A 45/4, 293-299 (1988)	81.60
Molt R.	Großkopf G.	B 45/3, 171-174 (1988)	42.65
Moretti A.	Carelli G.	B 45/2, 97-100 (1988)	42.55H
Morinaga A.	Morinaga A.	B 45/4, 273-277 (1988)	42.65G
Moskovets E.V.	Egorov S.E.	B 45/1, 53-57 (1988)	33.00
Mückenheim W.	Mückenheim W.	B 45/4, 259-261 (1988)	42.65C
Mückenheim W.	Lokai P.	B 45/4, 245-247 (1988)	42.65C
Müller G.	Müller G.	A 45/1, 41-51 (1988)	66.30L
Müller G.	Müller G.	A 45/2, 103-107 (1988)	71.55
Nakai H.	Takai M.	A 45/4, 305-312 (1988)	81.40
Namba S.	Takai M.	A 45/4, 305-312 (1988)	81.40
Neave J.H.	Joyce B.A.	A 45/3, 255-260 (1988)	61.14H
Nguyen H.X.	Kaschke M.	B 45/2, 71-75 (1988)	42.10
Nicolet M-A.	So F.C.T.	A 45/4, 265-270 (1988)	81.15
Nieh S.C.W.	So F.C.T.	A 45/4, 265-270 (1988)	81.15
Nowak T.	Poradzisz A.	A 45/2, 155-158 (1988)	61.80
Oehr C.	Oehr C.	A 45/2, 151-154 (1988)	81.15G
Onae A.	Suzuki T.	B 45/2, 87-91 (1988)	42.55D
Osborne M.R.	Osborne M.R.	B 45/4, 285-291 (1988)	42.55H
Paprocki K.	Paprocki K.	A 45/2, 109-112 (1988)	61.10T
Pashov N.	Vitali G.	A 45/2, 133-135 (1988)	61.16D
Penfold J.	Felici R.	A 45/2, 169-174 (1988)	61.10F
Penzkofer A.	Qiu P.	B 45/4, 225-236 (1988)	42.65C
Pereira D.	Carelli G.	B 45/2, 97-100 (1988)	42.55H
Pertsch T.	Barth H.D.	B 45/4, 205-214 (1988)	42.65
Piché M.	Couture M.	B 45/2, 93-95 (1988)	42.60D
Piglmayer K.	Mogyorosi P.	A 45/4, 293-299 (1988)	81.60
Ploog K.	Ploog K.	A 45/3, 233-244 (1988)	68.55
Ploog K.	Leo K.	A 45/1, 35-39 (1988)	72.10D
Politis C.	Politis C.	A 45/3, 261-263 (1988)	74.40V
Popov A.K.	Kodirov M.K.	B 45/1, 47-52 (1988)	42.65
Poradzisz A.	Poradzisz A.	A 45/2, 155-158 (1988)	61.80
Prussin S.	Jones K.S.	A 45/1, 1-34 (1988)	61.80
Qiu P.	Qiu P.	B 45/4, 225-236 (1988)	42.65C
Queisser H.J.	Leo K.	A 45/1, 35-39 (1988)	72.10D
Renner R.	Weber C.	B 45/3, 113-120 (1988)	78.65
Rettig W.	Rettig W.	B 45/3, 145-149 (1988)	82.50
Rinke M.	Güsten H.	B 45/4, 279-284 (1988)	07.65
Rodek E.	Feile R.	A 45/3, 185-187 (1988)	61.40
Rotocka K.	Poradzisz A.	A 45/2, 155-158 (1988)	61.80
Rühle W.W.	Leo K.	A 45/1, 35-39 (1988)	72.10D
Salamon S.	Böhm M.	A 45/1, 53-61 (1988)	61.40
Sato T.	Sato T.	A 45/4, 355-360 (1988)	81.10
Schott K.	Schott K.	A 45/1, 73-76 (1988)	68.55
Schulz M.	Schott K.	A 45/1, 73-76 (1988)	68.55
Segura A.	Cantarero A.	A 45/2, 125-132 (1988)	78.20D
Sharma S.K.	Sharma S.K.	A 45/3, 217-220 (1988)	66.30
Shimizu T.	Suzuki T.	B 45/2, 87-91 (1988)	42.55D
Siffert P.	Foulon F.	A 45/4, 361-364 (1988)	68.15
Slabko V.V.	Kodirov M.K.	B 45/1, 47-52 (1988)	42.65
Slaoui A.	Foulon F.	A 45/4, 361-364 (1988)	68.15
Snels M.	Snels M.	B 45/1, 27-31 (1988)	33.00
So F.C.T.	So F.C.T.	A 45/4, 265-270 (1988)	81.15
Solymar L.	Au L.B.	B 45/3, 125-128 (1988)	42.65
Solymar L.	Kalinin V.	B 45/3, 129-135 (1988)	42.65
Speiser S.	Speiser S.	B 45/3, 137-144 (1988)	33.00
Speiser S.	Speiser S.	B 45/4, 237-243 (1988)	33.00
Srinivasan R.	Srinivasan R.	A 45/4, 289-292 (1988)	42.60
Stafast H.	Stafast H.	A 45/2, 93-102 (1988)	81.15G
Stamm U.	Stamm U.	B 45/2, 101-108 (1988)	42.55M
Stankov K.A.	Stankov K.A.	B 45/3, 191-195 (1988)	42.65
Strumia F.	Carelli G.	B 45/2, 97-100 (1988)	42.55H
Sugioka K.	Sugioka K.	A 45/3, 189-192 (1988)	66.30
Suhr H.	Oehr C.	A 45/2, 151-154 (1988)	81.15G
Summonte C.	Bentini G.G.	A 45/4, 317-324 (1988)	79.20D
Sun D.C.	Du Y.C.	A 45/2, 165-168 (1988)	52.80S
Sung C.L.	Luo X.	B 45/1, 13-16 (1988)	42.60D
Sun M.	Sun M.	B 45/2, 83-86 (1988)	82.50
Suzuki T.	Suzuki T.	B 45/2, 87-91 (1988)	42.55D
Svanberg S.	Hertz H.M.	B 45/1, 33-36 (1988)	82.40
Syszko W.	Paprocki K.	A 45/2, 109-112 (1988)	61.10T
Szymonski M.	Poradzisz A.	A 45/2, 155-158 (1988)	61.80
Tabib-Azar M.	Tabib-Azar M.	A 45/2, 119-124 (1988)	72.50
Tachikawa M.	Suzuki T.	B 45/2, 87-91 (1988)	42.55D
Takai M.	Takai M.	A 45/4, 305-312 (1988)	81.40
Takano T.	Ito Y.	A 45/3, 193-201 (1988)	78.70D
Tanaka Y.	Suzuki T.	B 45/2, 87-91 (1988)	42.55D
Tanas R.	Kielich S.	B 45/4, 249-258 (1988)	42.50D
Thomson J.	Grader G.S.	A 45/3, 179-183 (1988)	74.00
Toda K.	Toda K.	B 45/2, 65-69 (1988)	07.60
Tokuda J.	Takai M.	A 45/4, 305-312 (1988)	81.40
Toyoda K.	Sugioka K.	A 45/3, 189-192 (1988)	66.30
Tran Thoai D.B.	Tran Thoai D.B.	A 45/3, 249-253 (1988)	73.20
Tsuchimoto J.	Takai M.	A 45/4, 305-312 (1988)	81.40
Unamuno S.	Foulon F.	A 45/4, 361-364 (1988)	68.15
Urban W.	Luo X.	B 45/1, 13-16 (1988)	42.60D
Urbassek H.M.	Waldeer K.T.	A 45/3, 207-215 (1988)	79.20N
Vitali G.	Vitali G.	A 45/2, 133-135 (1988)	61.16D
Waldeer K.T.	Waldeer K.T.	A 45/3, 207-215 (1988)	79.20N
Wallmeier H.	Wallmeier H.	B 45/4, 263-272 (1988)	33.20N
Wang H.	Du Y.C.	A 45/2, 165-168 (1988)	52.80S
Ward R.C.	Felici R.	A 45/2, 169-174 (1988)	61.10F
Weber C.	Weber C.	B 45/3, 113-120 (1988)	78.65
Weber E.R.	Jones K.S.	A 45/1, 1-34 (1988)	61.80
Weber H.G.	Großkopf G.	B 45/3, 171-174 (1988)	42.65
Welge K.H.	Meyer J.	B 45/1, 7-12 (1988)	42.60K
Wellegehausen B.	Hube M.	B 45/3, 197-201 (1988)	32.80H
Welling H.	Hube M.	B 45/3, 197-201 (1988)	32.80H
Werner P.	Vitali G.	A 45/2, 133-135 (1988)	61.16D
Wierba M.	Poradzisz A.	A 45/2, 155-158 (1988)	61.80
Wilhelmi B.	Kaschke M.	B 45/2, 71-75 (1988)	42.10

Name	First Name	Applied Physics	PACS
Williams W.G.	Felici R.	A 45/2, 169-174 (1988)	61.10F
Wintner E.	Krausz F.	B 45/1, 21-25 (1988)	42.65
Wirth H.O.	Güsten H.	B 45/4, 279-284 (1988)	07.65
Wolfrum J.	Dreier T.	B 45/3, 183-190 (1988)	33.20
Yakhnin V.Z.	Kodirov M.K.	B 45/1, 47-52 (1988)	42.65
Yang X.-L.	Jiang J.-S.	A 45/3, 245-247 (1988)	68.35
Yank K.N.	McElfresh M.W.	A 45/4, 365-368 (1988)	74.70V
Yardley J.T.	Speiser S.	B 45/4, 237-243 (1988)	33.00
Yoshida S.	Toda K.	B 45/2, 65-69 (1988)	07.60
Yü Q.X.	Luo X.	B 45/1, 13-16 (1988)	42.60D
Yu W.	Sun M.	B 45/2, 83-86 (1988)	82.50
Zacharias H.	Wallmeier H.	B 45/4, 263-272 (1988)	33.20N
Zahn M.	Dreier T.	B 45/3, 183-190 (1988)	33.20
Zawodny R.	Kielich S.	B 45/4, 249-258 (1988)	42.50D
Zeitler E.	Tran Thoai D.B.	A 45/3, 249-253 (1988)	73.20
Zhang J.	Joyce B.A.	A 45/3, 255-260 (1988)	61.14H
Zhang S.	Liu Z.X.	A 45/2, 159-164 (1988)	82.65J
Zhang S.B.	Großkopf G.	B 45/3, 171-174 (1988)	42.65
Zhao X.-A.	So F.C.T.	A 45/4, 265-270 (1988)	81.15
Zhou J.Y.	Castillejo M.	B 45/4, 293-299 (1988)	42.65
Zhou N.-F.	Jiang J.-S.	A 45/3, 245-247 (1988)	68.35
Zihlif A.	Ahmad M.	A 45/3, 203-205 (1988)	72.15
Zimmermann R.	Kaschke M.	B 45/2, 71-75 (1988)	42.10